Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (currently amended) A method for inspecting electronic components mounted on a printed circuit board with a mounting substance, each of the components including electrical interconnects to the circuit board comprising at least one of leads, and endcaps and component features, the method comprising:

imaging a the components component and the a mounting substance on the printed circuit board to obtain 3-D and 2-D data associated with the components component and material surrounding the components component; and

processing the 3-D and 2-D data in combination to find locations a position of the components component as a function of the 3-D and 2-D data and based on at least one of identified leads, endcaps, and component features as differentiated from at least one of the mounting substance and the circuit board on which the components component are is placed wherein the processing includes:

thresholding at least a portion of each of the 2-D and 3-D data to obtain respective 2-D and 3-D threshold data associated with the component and material surrounding the component;

combining the 2-D and 3-D threshold data to identify a set of data which corresponds to an overlapping image region of the 2-D and 3-D threshold data; and

locating at least one of a lead, an endcap, and a component feature using at least a portion of the set of data.

2.   (original) The method as claimed in claim 1 wherein the mounting substance is solder paste.

3.   (original) The method as claimed in claim 1 wherein the mounting substance is an adhesive.

4.   (original) The method as claimed in claim 3 wherein the adhesive is a glue.

5.   (original) The method as claimed in claim 1 wherein the leads have feet and wherein the step of processing includes the step of calculating centroids of the feet.

6.   (original) The method as claimed in claim 1 wherein the leads have feet and wherein the step of processing includes the step of calculating average height of the feet.

7.   (previously presented) The method as claimed in claim 1 wherein the step of processing includes calculating a percentage of pixels classified as mounting substance that are at an area of interest border to determine a potential for bridging between adjacent solder deposits, and the percentage of pixels comprises a border violation percentage.

8.   (cancel)

9.   (cancel)

10.   (original) The method as claimed in claim 1 wherein the step of processing includes the step of processing the 3-D data together with upper and lower threshold values to find the locations of the leads and the mounting substance.

11.   (currently amended) A system for inspecting electronic components mounted on a printed circuit board with a mounting substance, each of the components including electrical interconnects comprising at least one of leads, ~~and~~ endcaps <u>and component features</u>, the system comprising:
        a 3-D scanner for imaging the components and the mounting substance on the printed circuit board to obtain 3-D and 2-D data associated with the components and material surrounding the components; and
        a high-speed image processor for processing the 2-D data and the 3-D data together in combination to ~~locate and measure~~ <u>find locations of</u> the components as a function

of the 3-D and 2-D data as differentiated from at least one of the mounting substance and the circuit board wherein the processor includes:

means for thresholding at least a portion of each of the 2-D and 3-D data to obtain respective 2-D and 3-D threshold data associated with at least one component and material surrounding the at least one component;

means for combining the 2-D and 3-D threshold data to identify a set of data that corresponds to an overlapping image region of the 2-D and 3-D threshold data; and

means for locating at least one of a lead, endcap, and component feature using at least a portion of the set of data.

12.   (original) The system as claimed in claim 11 wherein the mounting substance is solder paste.

13.   (original) The system as claimed in claim 11 wherein the mounting substance is an adhesive.

14.   (original) The system as claimed in claim 13 wherein the adhesive is a glue.

15.   (original) The system as claimed in claim 11 wherein the leads have feet and wherein the high speed image processor also calculates centroids of the feet.

16.   (original) The system as claimed in claim 11 wherein the leads have feet and wherein the high speed image processor also calculates average height of the feet.

17.   (previously presented) The system as claimed in claim 11 wherein the high speed image processor also calculates a percentage of pixels classified as mounting substance that are at an area of interest border to determine a potential for bridging between adjacent solder deposits, and the percentage of pixels comprises a border violation percentage.

18.-19.   (cancel)

20.   (original) The system as claimed in claim 11 wherein the high speed image processor processes the 3-D data with the upper and lower threshold values to find the locations of the leads and the mounting substance.

21.   (cancel)

22.   (previously presented) The method of claim 1 wherein the step of processing comprises forming a blob image using at least one of the 2-D and 3-D data, and masking the at least one of the 2-D and 3-D data with the blob image.

23.   (previously presented) The method of claim 22 wherein the step of forming comprises applying at least one threshold to the at least one of the 2-D and 3-D data.

24.   (previously presented) The method of claim 22 further comprising detecting an edge of the blob image and applying a bounding rectangle to the edge.

25.   (previously presented) The method of claim 24 wherein the bounding rectangle is a minimum area rectangle, and wherein the bounding rectangle is used to determine component position and orientation.

26.   (previously presented) The method of claim 1 wherein the step of processing comprises comparing at least one of a predetermined three-dimensional size and shape of a component with 3-D data representative of the component so as to verify component presence.

27.   (previously presented) The method of claim 1 wherein the step of processing comprises comparing at least one of a predetermined three-dimensional size and shape of an attribute of the component with 3-D data representative of the attribute to verify component presence.

28.   (previously presented) The system of claim 11 wherein the high-speed image processor also (a) forms a blob image from at least one of the 2-D and 3-D data; and (b) masks at least one of the 2-D and 3-D data with the blob image.